CIA/RR IP-259 S-E-C-R-E-T

SECURITY INFORMATION

CENTRAL INTELLIGENCE AGENCY

Office of Research and Reports

MEMORANDUM 21 December 1951

SUBJECT: Shipment of Capacitor Paper to the Soviet Bloc

1. Technical Characteristics and Use of Capacitor Paper.

A special grade of thin paper (in thicknesses from 0.0002 inch to 0.001 inch) produced from Kraft stock is required in the manufacture of electrical capacitors. (The embargo definition, which uses the phrase "paper or synthetic film for dielectric use (condenser tissue)," is intended to include capacitor papers made from manila fiber, flax, linen, such new synthetics as cellophane, and metallized paper, as well as papers made from Kraft stock.) Condenser paper is extremely critical to produce, and manufacturing capacity is limited. Important factors in its manufacture include close tolerances in thickness, freedom from pinholes and conducting particles, uniformity in density, high dielectric strength, and low electrical losses. The productive capacity of the paper-mill equipment industry is relatively low for this material, extensive test facilities are required, and a long history-of-methods development is essential.

Thin capacitor paper is employed as the dielectric material in oil or wax-filled capacitors. Any deterioration in the paper during its life will shift the capacitor characteristics outside of tolerable limits, and any flaw in the paper will result in an early voltage breakdown and complete failure. Capacitor sections are produced in the form of windings, which comprise several layers of paper between two electrodes of thin aluminum foil. These windings are encased in a suitable container, impregnated under vacuum, and hermetically sealed.

As electronic components, capacitors are second in importance to vacuum tubes. Principal applications of paper capacitors are as follows:

a. Industrial components, with electrical power equipment.
b. In telecommunications, as components of telephone systems.
c. In military electronic items, as miniature capacitors.
d. Power supplies for high-voltage devices—radar, modulators, transmitters, atomic energy apparatus.
e. Ignition systems.
f. Radio and television receivers; electrical appliances.

Applications a through d represent over 80 percent of the USSR's demand for paper capacitors.

2. Productive Capacity of Various Countries, including Those of the Soviet Bloc.

Because of greater production capacity and superior quality the US is the preferred source of supply. Three US suppliers 1/ comprise the major world supply, followed by three European mills--one each in Finland, West Germany, and France. Additional small producers are located in Sweden, Czechoslovakia, Italy, and the UK. The current annual value of production for the US is estimated at $80 million to $100 million.

The domestic supply of capacitor paper in the Soviet Bloc reportedly is extremely limited and of inferior quality. The Tervakovski Mill in Petsamo, Finland, and the Bohemian Paper Mill in Vrany, Czechoslovakia, are producing paper of desired quality and thicknesses, but the effective capacity apparently is quite limited. Reports indicate that this type of paper is not produced in the Soviet Zone of Germany and that it is being obtained from the firms of Scholler and Hoesch (Gernsbach, Baden), and Julius Glatz (Neidenfels, Pfalz) in West Germany. 2/

3. Soviet Procurement from US Suppliers.

In 1949 and 1950, numerous cases of confirmed intelligence indicate that the USSR and the Satellites were attempting to import a major share of their needs for capacitor paper from the US. The value of reported orders for Soviet destinations has totalled approximately one-half million dollars. Specific inquiries were directed to US suppliers in 1949 through Sweden and Austria, and orders were placed in 1949 and 1950 through channels in Poland, Switzerland, Austria, and Italy.

Although this product is embargoed to the Soviet Bloc from the US as well as from other COCOM countries, including France, 3/ it is possible that attempted procurement of US production through third countries continues during 1951. There are, however, no reports at hand to substantiate this possibility.

4. Soviet Reliance on French Production of Capacitor Paper.

The Soviet Bloc continues to rely heavily upon French production of capacitor paper in 1951, the largest share of Soviet imports of capacitor

1. Peter Schweitzer Co., including Smith Paper, Inc.; Stevens Paper Co.; Crocker-Burbank Co.
2. In July 1951 the Scholler firm reportedly accepted an order from DAHA placed by Wilhelm Zimmerman GmbH, with offices at Hamburg and Berlin, Dahlem, Podielski Allee 70a.
3. During the export control conferences in London in October 1950, both the French and British governments agreed to recommend this product for international export control. It is now included as item No. 1,920 on International List I--"Paper or synthetic film for dielectric use (condenser tissue), coated or uncoated, 0.0012" (.038mm) or less in thickness."

paper being obtained from the Papeteries Bollore Company, 30 Avenue de Messine, Paris 8, France, with plant (Papeteries Odet) located, presumably, at Quimper. The Bollore Company is a manufacturer of paper, including capacitor paper. Its full capacity of capacitor paper is believed to be approximately 60 tons a month. This company had a contract to deliver 60 tons of capacitor paper a month to the USSR for a 12-month period ending May 1951, at which time the contract was to have been renegotiated. At a net price of $1.00 a pound for such paper, this transaction would average $132,000 monthly. 25X1X

It has been established by [redacted] that 180 metric quintals of condenser paper were shipped to the USSR in late 1950 under a French government export category entitled condenser paper, with numerical designation C-11-21-80. During the first 3 months of 1951, it is reported that 511 metric quintals of condenser paper were shipped to the USSR. The French delivery rate of this commodity to the USSR, therefore, is definitely established to exceed 18 tons a month at the present time, since a metric quintal is equivalent to 220 pounds of paper.

It also has been reported that the Bollore Company recently entered into a contract with TLT et Cie, 99 Avenue des Champs Elysees, Paris 8, to supply 10 tons of special condenser paper, the latter company having made arrangements to ship this paper to Elektroimpex, Budapest, Hungary. The office of MASPED in Budapest was to act as the transfer agency with the contract calling for a 1-ton shipment in May 1951, a 2-ton shipment in June, and a 7-ton shipment in July 1951. In order to secure an export license, TLT reportedly arranged with Bollore to specify that the special condenser paper (papier special pour condensateur) be listed as crystal paper. The source advises that an export license can be granted under this name. 1/

Another report indicates that 11,000 kilograms of natron condenser paper 43 mm. wide, valued at Swedish Kroner 155,430, imported by AB Hugo Hartig, Nybrogstan 3, Stockholm, from the Bollore firm were to have been reexported to Papexport, Warsaw, during October 1951. 25X6

[redacted]

1. TLT et Cie is listed in the Paris telephone directory in exactly this manner, with initials only.